

UNITED STATES DISTRICT COURT
FOR THE NORTHERN DISTRICT OF CALIFORNIA
SAN FRANCISCO DIVISION

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IN RE: DA VINCI SURGICAL Lead Case No.
ROBOT ANTITRUST LITIGATION, 3:21-cv-03825-VC
/
SURGICAL INSTRUMENT SERVICE
COMPANY, INC.,

Plaintiff,

vs. No. 3:31-cv-03496-VC

INTUITIVE SURGICAL, INC.,

Defendant.

_____/

(HIGHLY CONFIDENTIAL - ATTORNEY'S EYES ONLY)
VIDEOTAPED VIRTUAL VIDEOCONFERENCE
DEPOSITION OF SHARATHCHANDRA "SHARK" SOMAYAJI
November 4, 2022

Reported by: Kimberly L. Avery, CSR No. 5074

Job No. 5563382

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1 Q. And as a director of NPI engineering, what
2 was your role with respect to Xi instruments?

3 A. My role as a director was to manage and
4 maintain Xi 8 millimeter instrument lines and look
5 at the sales or the output that is needed from our 11:53
6 production team, and if duplicate lines were
7 needed, we would be duplicating lines.

8 Q. To handle extra demand, additional demand
9 for instruments?

10 A. That is correct. 11:54

11 Q. And most of those lines were similar to
12 lines that you had possibly designed at the time
13 you worked as an NPI manager previously?

14 A. That is correct.

15 Q. And in April 2021, you became a senior 11:54
16 director of manufacturing engineering?

17 A. That is correct.

18 Q. How does that role compare to your
19 previous role as director of NPI engineering?

20 A. Let me explain the role. 11:54

21 As the senior director of manufacturing
22 engineering, I am in charge or responsible for our
23 entire instruments and accessories manufacturing
24 engineering aspects for our Xi and Si portfolio.

25 Q. Who do you report to as a senior director 11:55

1 number of procedures this Xi instrument can work
2 on.

3 Q. And that's something that is programmed
4 into a memory location of the RFID tag?

5 A. That is correct. 12:56

6 Q. Do you know if that is read only memory?

7 A. That -- I do not know -- let me clarify.
8 No, it's not read only memory.

9 Q. What kind of memory is it?

10 A. One-time programmable memory. 12:57

11 Q. What is one-time programmable memory?

12 A. You can program it only once.

13 Q. And you can't change it?

14 MS. CAHOY: Objection to form.

15 THE WITNESS: So one-time programmable 12:57

16 memory, the way it works is it's a one-directional
17 stream. I can decrement, but I cannot increase.

18 BY MR. VAN HOVEN:

19 Q. Got it.

20 So you can't change it, but you can only 12:57
21 decrement a number?

22 A. That is correct.

23 Q. I'd like to go to the next slide, which is
24 slide 5.

25 A. Josh, you did go through slide 3, but 12:57

1 different encryption used on the Si Dallas chip
2 versus the Xi RFID chip?

3 A. That is correct.

4 Q. Is that the reason why at this time you
5 believe that Xi is impossible? 14:27

6 A. That is correct.

7 Q. Talk for a second about the data that's
8 stored on the Xi RFID chip.

9 A. Uh-huh.

10 Q. You talked a little bit about calibration 14:28
11 values.

12 A. That's correct.

13 Q. Remember that?

14 A. Yup, I did.

15 Q. And those are values that are passed from 14:28
16 the chip when it's energized by the robot?

17 A. Yes.

18 Q. What would happen if those calibration
19 values were zeroed out?

20 A. If those calibration values were zeroed 14:29
21 out, the robot would not know where the zero
22 position of the instruments are, like for the
23 tips, and you would have imprecise motion.

24 Q. Are you aware of anyone ever attempting to
25 change calibration values of an Xi instrument? 14:29

1 A. I am not aware of that.

2 Q. Something you've never heard of?

3 A. I have never heard of that outside of
4 Intuitive, no.

5 Q. That wouldn't make any sense to do, would 14:29
6 it?

7 A. Changing the calibration to the offsets of
8 an instrument would be -- wouldn't make sense.

9 Q. Why not?

10 A. The reason for that is, calibration is 14:29
11 done through calibration algorithm. So you have
12 to understand the zero positions of these
13 instruments and how it corresponds to equivalent
14 values on the robot.

15 So it is -- it takes several steps to get 14:30
16 that right.

17 Q. But changing that is just something no one
18 would want to do, right?

19 MS. CAHOY: Objection to form.

20 THE WITNESS: I would want to know why 14:30
21 anyone would want to tamper with the calibration
22 of an instrument.

23 BY MR. VAN HOVEN:

24 Q. Because you'd want those values to be used
25 by the robot to operate the instrument, right? 14:30

1 A. Yes.

2 Q. Do you have an understanding of what it
3 would be referring to to be hacking the chip you
4 use?

5 A. Yes. 14:48

6 Q. What's your understanding?

7 A. My understanding would be trying to break
8 into the RFID chip and the encryption.

9 End of the day, these are all encryptions.

10 So encryptions have a computer limit, 14:48

11 right? Like, there is processing power that's

12 needed, and you have to try combinations. And I

13 am thinking they are saying there's an opportunity

14 to hack into our RFID chip. Doesn't mean it's

15 done, but that's true for all cryptography, right? 14:48

16 Like, any encryption can be end of the day
17 broken.

18 Q. It's just a matter of computing power and
19 effort, right?

20 MS. CAHOY: Objection to form. 14:49

21 THE WITNESS: I would think so. Again,
22 not the subject matter that I'm aware of.

23 You should talk to Onur.

24 BY MR. VAN HOVEN:

25 Q. But that's your understanding, that it's a 14:49

1 3:02 p.m. We are going off the video record.

2 This concludes Media Unit No. 3.

3 (Break taken.)

4 THE VIDEOGRAPHER: The time is now

5 3:15 p.m. We're going back on the video record. 15:15

6 This will begin Media Unit No. 4.

7 BY MR. VAN HOVEN:

8 Q. I'd like to ask a few more questions about

9

10

15:15

11

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15:15

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15:16

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15:16

1 [REDACTED]

2 [REDACTED]

3 [REDACTED]

4 [REDACTED]

5 [REDACTED] 15:16

6 [REDACTED]

7 [REDACTED]

8 [REDACTED]

9 [REDACTED]

10 [REDACTED] 15:17

11 [REDACTED]

12 [REDACTED]

13 [REDACTED]

14 [REDACTED]

15 [REDACTED] 15:17

16 [REDACTED]

17 [REDACTED]

18 [REDACTED]

19 [REDACTED]

20 [REDACTED] 15:17

21 [REDACTED]

22 [REDACTED]

23 [REDACTED]

24 [REDACTED]

25 [REDACTED] 15:17

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4

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15:18

6

A. That is correct.

7

8

Q. Have you heard of that PCB referred to as
a PIC?

9

10

11

12

A. So the PIC or PCA? Like, PCBs and PCAs
are interchangeably used. So PCA is printer
circuit assembly; that's probably what you have
heard. 15:18

13

THE REPORTER: I'm sorry, that's what?

14

15

THE WITNESS: Printer circuit assembly,
PCA, is word probably he has heard. 15:18

16

17

PIC is a chip that gets -- a particular
company that makes chips, which is Microchip.

18

MR. VAN HOVEN: Got it.

19

20

So I'm going to bring up as Exhibit 227
Tab 34. 15:19

21

22

(Plaintiff's Exhibit No. 227 Marked for
Identification.)

23

BY MR. VAN HOVEN:

24

25

Q. I'll represent that this has the Bates
number Intuitive-01004230 -- 15:19

1 A. Uh-huh.

2 Q. -- in the first page.

3 A. Is this an e-mail from Cliff Bargar?

4 Q. Yes. Correct.

5 A. Thank you. 15:19

6 Q. Please take a look, and let me know when
7 you are ready to discuss this e-mail.

8 A. I am ready, Josh.

9 Q. And does this e-mail -- this is an e-mail
10 chain from Cliff Bargar to yourself and Harsukh 15:21
11 Ratia, on May 28, 2020; is that right?

12 A. That is correct.

13 [REDACTED]
14 [REDACTED]
15 [REDACTED] 15:22

16 [REDACTED]
17 Q. And in the e-mail from -- from Cliff to
18 you and Harsukh, what do you understand Cliff to
19 be presenting to you here?

20 [REDACTED] 15:22

21 [REDACTED]
22 [REDACTED]
23 [REDACTED]
24 [REDACTED]

25 [REDACTED] 15:23

1 [REDACTED]
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15:26

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A. That is correct.

7

8

Q. And you'll note that there's some
attachments to this document?

9

A. It is --

10

11

12

Q. I'm just talking -- I'm just talking about 15:26
in the -- in the e-mail itself, it references
attachments?

13

A. That is correct. Correct.

14

15

16

Q. And so I'm going to pull up as exhibit --
before I do that, you'll note that the first 15:26
attachment is called

17

18

in the -- in the
e-mail itself.

19

A. Hold on.

20

21

MS. CAHOY: Counsel, are you referring to 15:27
the "Attachments" line under "Subject"?

22

23

MR. VAN HOVEN: Yeah, the "Attachments"
line under "Subject."

24

Thank you, Kate.

25

THE WITNESS: Got it.

15:27